AMENDMENTS TO THE SPECIFICATION:

Replace the Title of Invention at Page 1, lines 1-2 with the following Title of Invention:

METHOD OF SEALING WAFER BACKSIDE FOR FULL-FACE PROCESSING ~~ELECTROCHEMICAL PLATING~~

Replace the paragraph at Page1, lines 5-7 with the following paragraph:

This application is a continuation of U.S. Application No. 09/910,686 filed on July 20, 2001 and is related to and claims priority from U.S. Provisional Application No. 60/275,406 filed on March 12, 2001 and entitled Wafer Carrier For Wet Processes, all incorporated herein by reference.

Replace the paragraph at Page 3, lines 4-10 with the following paragraph:

In use, the carrier head is immersed into a solution, typically an electrolyte in a deposition and certain material removal processes, or a slurry in a CMP material removal process, for example. In processes where moveable contact with a pad is desired, such as for polishing, such a pad will be included. During any such process, it is important to prevent leakage of the solution to the backside of the wafer. Such leakages to the backside of the wafer contaminate the wafer backside and the electrical contacts. Removal of contaminants from the wafer backside requires an extra process step that is time consuming and increases manufacturing costs.

Replace the paragraph beginning at Page 4, line 1, with the following paragraph:

Yet another conventional CMP head is similar to the head shown in Figure 1A, but it holds the wafer from the back side by vacuum when positioning the wafer for processing and from the circumference of the wafer by a retaining ring during processing, thereby fully exposing the front surface of the wafer. While the CMP process is done over the front surface of the wafer, the slurry from the CMP process can nevertheless migrate toward the back surface of the wafer.

Replace the paragraph beginning at Page 4, lines 20 to Page 5, lines 6, with the following paragraph:

The present invention attains the above objects, considered singly or in combination, among others, by providing a wafer carrier that includes an opening, which in one embodiment is a plurality of holes, disposed along the periphery of the wafer carrier. A gas emitted through the holes onto a peripheral back edge of the wafer assists in preventing the processing liquids and contaminants resulting therefrom from reaching the inner region of the base and the backside inner region of the wafer. In another embodiment, a plurality of concentric sealing members are used to ~~prove~~ provide a better seal, and the outer seal is preferably independently movable to allow cleaning of a peripheral backside of the wafer to occur while the wafer is still attached to the wafer carrier.

Replace the paragraph beginning at Page 6, line 5 with the following paragraph:

Figures 4A and 4B illustrate injected gas and process fluid flow using the wafer carriers according to the two embodiments illustrated in Figures 3A and 3B of the present invention.

Replace the paragraph beginning at Page 7, line 1 with the following paragraph:

Reference will now be made to the drawings wherein like numerals refer to like parts throughout. ~~As shown in~~Figure 2~~,~~ shows an exemplary processing system 100. When used for electrodeposition, the system 100 may, for example, include a cathode assembly 102 and an anode assembly 104 and can then deposit a conductive material such as copper on a workpiece or substrate, such as semiconductor wafer. When used for material removal, the system 100 may, for example, have the polarity of the anode and cathode reversed, or instead use other processing chemicals, such as a CMP slurry. It should be understood that the particular process in which the present invention is used is not of particular importance. What is significant, as illustrated hereinafter, is prevention of contamination of a processing solution from reaching a backside of a wafer. And in certain embodiments, also allowing for full face processing of the wafer to occur.

Replace the paragraph beginning at Page 9, line 11, with the following paragraph:

Figures 3A and 3B each illustrate a side view with a cut-away of the wafer carrier 106 of embodiments of the present invention in further detail. As will become apparent, the difference

between the embodiments illustrated in Figures 3A and 3B is the type of sealing member 154 that is used. The wafer carrier 106 comprises a carrier body 140 having a lower and upper end 142 and 144. The lower end 142 of the carrier 106 comprises a carrier base 146, chuck, upon which the wafer 108 is held. The carrier base may be made of variety of materials, such as plastic, steel or titanium. And, as shown the carrier ring 147 can have a surface portion that extends below the surface of the wafer that contacts the support pad 166 described further below to prevent lateral movement of the wafer 108 beyond the surface portion that extends below the backside surface of the wafer 108. The carrier base 146 is preferably surrounded by a carrier ring 147. The carrier ring may be constructed separately or may be an integral part of the carrier base. The carrier ring may be made of plastic or any material that is stable in the process solutions. The wafer carrier 106 is rotated or moved through the shaft 110. In this embodiment, a bottom surface 148 of the carrier base 146, preferably disk shaped, includes a first surface portion 150 and a second surface portion 152. The first surface portion 150 is a peripheral surface surrounding the second surface portion 152 that is an inner region. The first and second surface portions 150, 152 of the bottom surface 148 are established by a sealing member 154 of the present invention, described hereinafter.

Replace the paragraph beginning on page 9, line 1 with the following paragraph:

During deposition or certain electropolishing processes, typically the solution 120 is an electrolyte that is used to deposit material on the front surface 112 of the wafer 108 under applied appropriate potential or remove material from the front surface 112 of the wafer 108 under applied appropriate potential. During CMP, such potential may or may not be applied. With all processes, however, the wafer front surface 112 is preferably rotated, as is known.

Replace the paragraph beginning on page 12, line 11 with the following paragraph:

As shown in Figures 4A and 4B, during the above exemplified deposition process, the gas flow from the ports 159, in the direction of the arrow 168, sweeps away the electrolyte 120 flowing in the direction of the arrow 170 (delivered to the frontside of the wafer 108 through pad 200 that contains channels 202 therein) and assists in preventing the electrolyte solution from reaching the peripheral back edge 162 of the wafer 108. In cooperation with the sealing member 154, the wafer carrier of the present invention advantageously prevents the electrolyte from

reaching the back surface 113 of the wafer 108 while rotating the wafer 108 relative to the pad 200 and fully exposing the front surface 112 of the wafer to the processing solutions.

Replace the paragraph beginning on page 17 line 15 through page 18 line 6 with the following paragraph:

As shown in Figure 8D, it becomes apparent why the first sealing member 508 is preferably an inflatable member, ~~,since a~~ After a plating step, in which both the first sealing member 508, and the second sealing member 509 are providing a seal, is completed, the first sealing member 508, when an inflatable member, can be deflated, as shown, ~~, to~~ This exposes a potentially contaminated edge region 530 while the wafer is still being held by the carrier 500 and the vacuum suction is still being applied to the area sealed by the o-ring 509. Thus, in this configuration, cleaning of the edge region 530 can occur by applying a cleaning fluid or fluids (such as either a liquid cleaning fluid, or both a liquid cleaning fluid and thereafter a gas such as air for drying) in the direction of arrow into the edge region 530 from a cleaning system (not shown) into the area that had previously been protected to the inflated inflatable member 508. During the cleaning and a subsequent drying step the carrier 500 may also be spun. Although in this embodiment the first sealing member 508 is preferably an inflatable membrane, for the reasons described above, other alternative seals, for example an o-ring, can also be used.

Replace the paragraph beginning at page 19, line 1, with the following paragraph:

Figure 9B illustrates in more detail the sealed position, in which both the first seal member 908 and the second seal member 909 provide the sealing function. In this sealed position, the vertically moveable annular housing 904 is moved downward, to establish the seal between the first sealing member 908 and the wafer 905. The wafer is processed in the chemical environment when both sealing members 908 and 909 seal the wafer 905. It is noted that there is no carrier ring with a surface portion that extends below the backside surface of the wafer 906, as is shown in Figure 3A, to assist in preventing lateral movement of the wafer 905, and thus, the vacuum applied through vacuum lines 924 is solely used to prevent lateral movement of the wafer 905 relative to the carrier head 900. In the unsealed position, which allows a cleaning fluid, or gas, to be injected into the backside of the wafer outside of the second sealing member 909, as shown by the arrows in Figure 9C, the vertically moveable annular housing is moved upward, thereby disengaging the first sealing member 908 and providing a gap through which the cleaning fluid or gas can be injected to the peripheral backside of the wafer 905, outside of the second sealing member 909.